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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/784,568	RAMASUBRAMANIAN ET AL.	
	Examiner	Art Unit	
	TUAN-KHANH PHAN	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment, filed 3/24/2008, has been entered and acknowledged by the Examiner. Claims 1 and 30-32 are pending.

Response to Arguments

Applicant's arguments with respect to claims 1 and 30-32 have been considered, but they are not persuasive.

Issue I. The Applicant argues that Yamamoto does not disclose or suggest, however, the subject matter as set forth in either of independent claims 1 or 27. For example, Yamamoto does not disclose or suggest a method, as set forth in claims 1 and 27, in which "transmission rounds" and "transit buffer rounds" are used, and in particular does not disclose or suggest a method in with data packets are received at a node, and for each received data packet.

Response I. In a ring or star topology of network and node-to-node transmission, the rounds of transmission are to be configured and recognized in such that it affects data packets sending and receiving from one's transit buffer to the next. Since the reference reads on the claimed invention as explained, applicant's argument is not persuasive.

Issue II. The Applicant argues that Yamamoto also does not disclose or suggest the subject matter as set forth in either of independent claims 11 or 28, as amended. For example, Yamamoto does not disclose or suggest a method, as set forth in claims 11 and 28, that makes use of a "transit buffer" and a "local buffer," as previously

discussed in connection with claims 1 and 27. In addition, Yamamoto does not disclose or suggest the claimed transmission pattern that fairly and efficiently allows data to be transmitted from both buffers, with local and autonomous control as discussed above in connection with claims 1 and 27. Further yet, Yamamoto does not disclose or suggest the use.

Response II. The reference indicates that a node having a storage area to receive when data packets are intended for the node; otherwise, data packets are placed in a buffer to be sent out to the next node. Such indication encompass the claimed invention; therefore, Applicant's argument is not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3-10, 22-27 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims (1, 7, 22, 27 and 29) recite "successive transmission round(s)" or "successive processing cycle(s)" matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 3-10 and 23-26 are rejected for the same reason for being dependents of claims 1, 7, 22 and 27.

Claims 1, 3-21, 27-28 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims (1, 7, 11, 20

and 27) recite "a (the) specific one node" matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 3-10, 12-19, 23-26 and 28 are rejected for the same reason for being dependents of claims 1, 7, 11, 20 and 27.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-9 and 11-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (US Pub. 20030043855), hereinafter referred to as Yamamoto.

Regarding claims 1 and 27-29, Yamamoto teaches a computer-implemented method for processing data on a specific one node in a network comprising a plurality of nodes configured in a topology in which data, to reach an intended destination node, are transmitted through a configured node-to-node sequence, each of the nodes having a different a node identifier that distinguishes the node from other nodes in the network, the method comprising:

receiving data packet at the specific one node, each received data packet being transmitted by a prior node in a first direction through the configured node-to-node

sequence and comprising a destination node identifier and a transmission round identifier indicating a transmission round of a prior node in which the data packet was sent (¶ 0033 lines 1-5);

for each received data packet (¶ 0041, 0042 lines 1-4)

i) if the transmission round identifier for the packet does not match a transmission round identifier for an immediately preceding received data packet, changing a first transmit buffer round indicator for a first transit buffer in the specific one node (¶ 0033 lines 1-5);

ii) if the destination identifier for the data packet does not match the node identifier of the specific one node, storing the data packet in the first transit buffer for later transmission by the specific one node to another node in the first direction, the first data packet being stored with an assigned indicator of the current transit buffer round; and (¶ 0045, 0046 lines 1-5; ¶ 0050, lines 1-7; Figure 22 **teaches downstream direction as the first direction**);

iii) if the destination identifier of the first data packet matches the node identifier, processing the data packet on the specific one node (¶ 0044 lines 1-5; ¶ 0054 lines 1-7); and

storing data packets originating at the specific one node in a first local buffer of the specific one node for later transmission by the specific one node to another node in the first direction (¶ 0044 lines 1-5; ¶ 0052; ¶ 0054 lines 1-7; ¶ 0055, lines 1-9);

transmitting data packets from the specific one node in the first direction in successive transmission rounds, wherein each successive transmission round there

is transmitted i) one ore more data packets from the first transit buffer that each have the same assigned transit buffer round identifier, if any data packets are present in the first transit buffer, and ii) one or more data packets from the first local buffer, if any data packets are present in the first local buffer (¶ 0045, 0046 lines 1-5; ¶ 0050, lines 1-7).

Regarding claim 2, Yamamoto teaches the computer-implemented method of claim 1, wherein the method further comprises: checking a transmission round of the first data packet; and if the transmission round of the first data packet does not match a transmission round of a previous data packet received on the node from the first direction, changing a first transit buffer round that is associated with the first transit buffer (¶ 0083 lines 12-22; ¶ 0084 lines 3-19 **teaches checking the appropriate packets with the correspondent nodes**).

Regarding claim 3, Yamamoto teaches the computer-implemented method of claim 2, wherein checking a transmission round of the first data packet includes checking a round bit in the first data packet (¶ 0066; ¶ 0068 lines 1-6).

Regarding claim 4, Yamamoto teaches the computer-implemented method of claim 2, wherein changing a first transit buffer round that is associated with the first transit buffer includes changing a first transit buffer round that is associated with the first transit buffer if one or more data packets are already stored in the first transit buffer (¶ 0083 lines 12-22; ¶ 0084).

Regarding claim 5, Yamamoto teaches the computer-implemented method of claim 1, wherein the method comprises processing data on a node in a ring network (Figure 6; ¶ 0062, lines 8-13).

Regarding claim 6, Yamamoto teaches the computer-implemented method of claim 1, wherein the method further comprises implementing congestion control when the first transit buffer is full (¶ 0005, lines 3-9 **teaches a control to adapt with a buffer available status**).

Regarding claim 7, Yamamoto teaches the computer-implemented method of claim 1, wherein the method further comprises: receiving a second data packet on the node from a second direction (¶ 0033 lines 1-5);

For each data packet received in the second direction,

i) if the transmission round identifier for the packet does not match a transmission round identifier for an immediately preceding received data packet, changing a second transit buffer round indicator for a the specific one node (¶ 0033 lines 1-5);

ii) if the destination identifier for the data packet does not match the node identifier of the specific one node, storing the second data packet in a second transit buffer for later transmission by the node to another node in the second direction, the first data packet being stored with an assigned indicator of the current transit buffer round for the specific one node; and (¶ 0096; Figure 22 **teaches an upstream transmission as a second direction operates by using the control of destination address**); and

if the destination identifier of the data packet matches the node identifier, processing the second data packet on the node to create a second processed data packet (¶ 0083 lines 12-22; ¶ 0084 lines 3-19); and

storing the second processed data packet in a second local buffer for later transmission by the node to another node in the second direction (¶ 0044 lines 1-5; ¶0052; ¶ 0054 lines 1-7; ¶ 0055, lines 1-9).

Regarding claim 8, Yamamoto teaches the computer-implemented method of claim 7, wherein the second direction is opposite to the first direction (¶ 0050, lines 1-7; ¶ 0096; Figure **22 teaches upstream and downstream as opposite direction**).

Regarding claim 9, Yamamoto teaches the computer-implemented method of claim 7, wherein the data packets have a common size (¶ 0137, last 4 lines; ¶ 0139, lines 3-14 **teaches packets are set to be same packet lengths**).

Regarding claim 11, Yamamoto teaches a computer-implemented method for processing data on a specific one node in a network comprising a plurality of nodes configured in a topology in which data, to reach an intended destination node, are transmitted through a configured node-to-node sequence, the method comprising:

determining if a first transit buffer on the specific one node is empty of received data packets that have not already been transmitted form the specific one node en route to the destination node, wherein the specific one node is configured to store in the first transit buffer all data packets that i) are received from another node of the network, ii) have a destination node that is a node other than the specific one node, and iii) are to

be transmitted from the specific one node en route to the destination node in a first direction through the configured node-to-node sequence (¶ 0048, lines 1-5);

if the first transit buffer is empty, transmitting in a first direction a data packet stored in a first local buffer, the first local buffer capable of holding one or more data packets originating from the node (¶ 0048, lines 1-5);

if the first transit buffer is not empty, transmitting in the first direction one or more data packets stored in the first transit buffer if a first transmission condition is satisfied (¶ 0048, lines 1-5); and

transmitting in the first direction a data packet stored in the first local buffer if the first transmission condition is not satisfied (¶ 0055, lines 1-6).

Regarding claim 12, Yamamoto teaches the computer-implemented method of claim 11, wherein transmitting in the first direction a data packet stored in a first local buffer if the first transit buffer is empty includes changing a transmission round associated with the transmitted data packet (¶ 0048, lines 1-5).

Regarding claim 13, Yamamoto teaches the computer-implemented method of claim 12, wherein changing a transmission round associated with the transmitted data packet includes changing a round bit in the transmitted data packet (¶ 0083 lines 12-22; ¶ 0084).

Regarding claim 14, Yamamoto teaches the computer-implemented method of claim 11, wherein data packets transmitted in the first direction have a common size (¶ 0137, last 4 lines; ¶ 0139, lines 3-14 **teaches packets are set to be same packet lengths**).

Regarding claim 15, Yamamoto teaches the computer-implemented method of claim 11, wherein transmitting in a first direction a data packet stored in a first local buffer if the first transit buffer is empty includes transmitting one or more data packets stored in the first local buffer (¶ 0046; ¶ 0048, lines 1-5).

Regarding claim 16, Yamamoto teaches the computer-implemented method of claim 11, wherein transmitting in the first direction a data packet stored in the first local buffer if the first transmission condition is not satisfied includes changing a transmission round associated with the transmitted data packet (¶ 0083 lines 12-22; ¶ 0084).

Regarding claim 17, Yamamoto teaches he computer-implemented method of claim 11, wherein transmitting in the first direction a data packet stored in the first local buffer if the first transmission condition is not satisfied includes transmitting in the first direction a data packet stored in the first local buffer if the first local buffer contains one or more data packets (¶ 0083 lines 12-22; ¶ 0084).

Regarding claim 18, Yamamoto teaches the computer-implemented method of claim 11, wherein transmitting in the first direction one or more data packets stored in the first transit buffer if a first transmission condition is satisfied includes transmitting in the first direction one or more data packets stored in the first transit buffer if a previous data packet transmitted in the first direction was empty (¶ 0048, lines 1-5), or the previous data packet transmitted in first direction had been stored in the first local buffer (¶ 0048, lines 1-5), or a transmission round associated with the previous data packet transmitted in first direction matches a transmission round of a first data packet stored in the first transit buffer (¶ 0083 lines 12-22; ¶ 0084 lines 3-19).

Regarding claim 19, Yamamoto teaches the computer-implemented method of claim 11, wherein the method comprises processing data on a node in a ring network (Figure 6; ¶ 0062, lines 8-13).

Regarding claim 20, it is rejected for the same reasons as discussed in the claim 11.

Regarding claim 21, Yamamoto teaches the computer-implemented method of claim 20, wherein the second direction is opposite to the first direction (¶ 0096; Figure 22 **teaches an upstream transmission as a second direction operates by using the control of destination address**).

Regarding claim 22, Yamamoto teaches a computer-implemented method for processing data between nodes in a distributed network configured in a topology in which data, to reach an intended destination node, are transmitted through a configured node-to-node sequence, the method comprising:

maintaining a set of local buffers and a set of transit buffers for each node in the distributed network, the set of local buffers for a given node being used for storing data originating at the given node, and the set of transit buffers for the given node being used for storing data received by the given node but destined for another node in the distributed network (¶ 0046; ¶ 0055, lines 1-9); and

using the local buffers and the transit buffers to process data between the nodes in processing cycles, wherein each node is capable of receiving data from another node, and wherein each node transmits to another node, in each successive processing cycle, i) one or more data packets from the transit buffer that were each transmitted by

a prior node in the same processing cycle, if any data packets are present in the first transit buffer, and ii) one or more data packets from the first local buffer, if any data packets are present in the first local buffer (¶ 0054 lines 1-7; ¶ 0055, lines 1-9).

Regarding claim 23, Yamamoto teaches the computer-implemented method of claim 22, wherein each node is capable of storing received data in one of its transit buffers, and changing a transit buffer round associated with the transit buffer containing the stored data if a transmission round of the received data does not match a transmission round of previously received data (¶ 0055, lines 1-9).

Regarding claim 24, Yamamoto teaches the computer-implemented method of claim 22, wherein each node is capable of transmitting data from one of its local buffers and from one of its transit buffers to another node and changing a transmission round associated with the transmitted data (¶ 0083 lines 12-22; ¶ 0084).

Regarding claim 25, Yamamoto teaches the computer-implemented method of claim 22, wherein the topology of the network comprises a ring network (Figure 6; ¶ 0062, lines 8-13).

Regarding claim 26, Yamamoto teaches the computer-implemented method of claim 22, wherein: maintaining a set of local buffers and a set of transit buffers for each node in the distributed network includes maintaining at least two local buffers and at least two transit buffers for each node in the distributed network, such that each local buffer and each transit buffer is associated with a particular direction of data transmission (Figure 13).

Regarding claim 30, Yamamoto teaches the computer-implemented method of claim 11, wherein the first transmission condition is that each of the one or more data packets that is transmitted has the same transit buffer round identifier associated with the data packet

Regarding claim 31, the computer-implemented method of claim 30, wherein each data packet received at the specific one node from another node is checked to determine if a transmission round identifier that identifiers a transmission round of an immediately preceding node in which the data packet was transmitted has changed from a transmission round identifier of an immediately preceding data packet received from the immediately preceding node, and if there is a change, changing a current transit buffer round indicator for the specific one node.

Regarding claim 32, the computer-implemented method of claim 31, wherein the method further comprises, for each received data packet that is stored in the transit buffer of the specific one node, storing the received data packet in association with an identifier for the current transit buffer round of the specific one node.

Claim Rejections - 35 USC § 103

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Gollnick et al. (US Pat. 5,940,771).

Regarding claim 10, Yamamoto teaches the computer-implemented method of claim 1, but lacks processing the data packet on the node includes processing the data packet on the specific one node using a segmentation and reassembly layer. However, in the same field of endeavor of transmission packets among nodes,

Gollnick et al. teach processing the data packet on the node includes processing the data packet on the node using a segmentation and reassembly layer (col. 42, lines 35-44). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a segmentation and reassembly layer taught by Gollnick et al. into the transmission nodes taught by Yamamoto to efficiently translate packets into original data.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN-KHANH PHAN whose telephone number is (571)270-3047. The examiner can normally be reached on 4/5/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TKP
/Hung T Vy/
Primary Examiner, Art Unit 2163